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naturally occurring artemin amino acid sequence or a fragment thereof of at least 8 contiguous amino acids, wherein said nucleotide sequence encoding a naturally occurring artemin amino acid sequence consists of not more than 10,000 nucleotides [or a conservatively substituted variant thereof], and wherein said artemin amino acid sequence is at least 65% identical to SEQ ID NO:26 or a fragment thereof, and promotes survival of neurons [of at least 8 contiguous amino acids which nucleotide sequence is capable of specifically hybridizing to a nucleotide sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:37, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:60, SEQ ID NO:61 and SEQ ID NO:62], and which polynucleotide also comprises a nucleotide sequence encoding a fragment containing an active domain of at least one other growth factor from the TGF- $\beta$  superfamily.

15. (Three times amended) An isolated and purified nucleic acid molecule or fragment thereof consisting of no more than 10,000 nucleotides, wherein the isolated and purified nucleic acid molecule comprises a nucleotide sequence [encoding] that encodes [an] a naturally occurring artemin amino acid sequence that is at least 65% identical to SEQ ID NO:26 or a fragment thereof, and promotes survival of neurons. [or a conservatively substituted variant thereof, which nucleic acid molecule or fragment thereof contains from at least 15 to no more than about 10,000 nucleotides and is capable of specifically hybridizing to a nucleotide sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:37, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:60, SEQ ID NO:61 and SEQ ID NO:62.]

16. (Twice amended) The isolated and purified nucleic acid molecule of claim 15, wherein the [nucleic acid molecule comprises a nucleotide sequence encoding an] artemin polypeptide [which] promotes survival of trigeminal ganglion neurons, nodose ganglion neurons, superior cervical ganglion neurons, and tyrosine-hydroxylase-expressing dopaminergic ventral midbrain neurons [wherein said nucleic acid molecule specifically hybridizes to a nucleotide sequence encoding mature human artemin as set forth in SEQ ID NO:6, SEQ ID NO:7 or SEQ ID NO:8 or to a nucleotide sequence encoding mature mouse artemin as set forth in SEQ ID NO:37, SEQ ID NO:38 or SEQ ID NO:39, or to the complement of said sequence].

17. (Amended) The isolated and purified nucleic acid molecule [or nucleic acid molecule complementary thereto] of claim [16] 15 comprising a nucleotide sequence encoding an artemin polypeptide as set forth in SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:34, SEQ ID NO:35 or SEQ ID NO:36.

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18. (Amended) The isolated and purified nucleic acid molecule [or nucleic acid molecule complementary thereto] of claim 17 comprising a nucleotide sequence as set forth in SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:37, SEQ ID NO:38, SEQ ID NO:39 or SEQ ID NO:44.

25. (Twice amended) A recombinant nucleic acid molecule comprising an artemin nucleotide sequence wherein the artemin nucleotide sequence encodes [an] naturally occurring artemin amino acid sequence selected from the group consisting of a pre-pro-artemin polypeptide, a pro-artemin polypeptide, a mature artemin polypeptide[, a conservatively substituted variant thereof] and a fragment of said pre-pro-artemin amino acid sequence having at least 8 contiguous amino acids, and wherein the artemin [nucleotide sequence is capable of specifically hybridizing to a nucleotide sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:37, SEQ ID NO:38, SEQ ID NO:39, SEQ ID NO:60, SEQ ID NO:61 and SEQ ID NO:62.] amino acid sequence is at least 65% identical to SEQ ID NO:26 and promotes survival of neurons.

27. (Twice amended) An isolated and purified nucleic acid molecule comprising a polynucleotide encoding:

- (a) a pre- region of artemin as set forth in SEQ ID NO:54 or SEQ ID NO:55;
- (b) a pro- region of artemin as set forth in SEQ ID NO:56 or SEQ ID NO:57;
- (c) a pre-pro- region of artemin as set forth in SEQ ID NO:58 or SEQ ID NO:59; or
- (d) [a conservatively substituted variant of (a), (b) or (c) wherein the polynucleotide encoding said conservatively substituted variant is capable of specifically hybridizing to a nucleic acid sequence selected from the group consisting of SEQ ID NO:24, SEQ ID NO:27, SEQ ID NO:30 and SEQ ID NO:46, or a complement thereof.] a polypeptide that is at least 65% identical to (a), (b) or (c).

39. (Amended) The [nucleic acid comprising a ] polynucleotide [encoding a pan-growth factor] according to claim 12, wherein the at least one other growth factor from the TGF- $\beta$  superfamily is selected from the group consisting of transforming growth factor- $\beta$ 1 (TGF $\beta$ 1), transforming growth factor- $\beta$ 2 (TGF $\beta$ 2), transforming growth factor- $\beta$ 3 (TGF $\beta$ 3), inhibin  $\beta$  A (INH $\beta$ A), inhibin  $\beta$  B (INH $\beta$ B), the *nodal* gene (NODAL), bone morphogenetic proteins 2 and 4 (BMP2 and BMP4), the *Drosophila decapentaplegic* gene (*dpp*), bone morphogenetic proteins 5-8 (BMP5, BMP6, BMP7 and BMP8), the *Drosophila* 60A gene family (60A), bone morphogenetic protein 3 (BMP3), the *Vgl* gene, growth differentiation factors 1 and 3 (GDF1 and GDF3), dorsalin (*drsln*), inhibin  $\alpha$  (INH $\alpha$ ), the *MIS* gene